

REMARKS

This is in full and timely response to the above-identified Office Action. The above listing of the claims supersedes any previous listing. Favorable reexamination and reconsideration are respectfully requested in view of the preceding amendments and the following remarks.

Claim amendments/status

In this response, claim 8 has been amended and claims 11-21 are cancelled. The amendments to claim 8 are submitted to be such as to overcome the rejections as will become evident hereinbelow.

Rejections under 35 USC 103

- 1) The rejection of claims 2-5, 7-15 and 17-21 under 35 USC §103(a) as being unpatentable over Orita et al. in combination with Nakamura et al. is respectfully traversed.

In this rejection, the Examiner takes the position that it would be an obvious matter of design choice to split the heat treatment in Orita et al. into a surface treatment and a heat treatment. However the applicants traverse this position in that Orita et al. cannot be shown to disclose or suggest the heat treatment as recited in claim 8. That is to say, in view of the purpose and condition, the heat treatment of Orita et al. is a different process from c') irrespective of the fact that it may seem similar to the c) surface treatment recited in claim 8, at first blush.

The c') heat treatment recited in claim 8 is performed to improve the oxide-removed surface state, while the heat treatment in Orita et al. is performed to remove oxides or impurities. More specifically, the c') treatment is such as to repair the damage generated during step c) the surface treatment for removing the oxide.

Further, claim 8 has been amended to limit the c') treatment to be carried out in nitrogen or ammonia. This should be compared with the heat treatment disclosed in Orita et al. which is required to be carried out in hydrogen or a hydrogen generating condition, such as by the use of hydrazine.

For these reasons the heat treatment which is carried out in accordance with claim 8 is different from the heat treatment which is used in Orita et al. and cannot be distilled from this reference or any combination of Orita et al. and Nakamura et al.

- 2) The rejection of claims 6 and 6 under 35 USC 103(a) as being unpatentable over Orita et al. in combination with Nakamura et al. and further in view of Lee et al., is respectfully traversed.

In this rejection it is admitted that Orita et al. does not teach nitridation of the substrate. To overcome this admitted shortcoming the Lee et al reference is cited. The motivation for this is alleged to be that the nitridation will give a high quality nitride based semiconductor layer. However, nothing has been advanced to show that the hypothetical person of ordinary skill would be moved to add nitridation to the process disclosed in Orita et al. In fact, it has not been shown that Orita et al. alone does not produce a "high quality" product and would suggest that it be in need of further improvement.

It will be noted that the above arguments while focusing mainly on the Orita et al. reference are not attacking the references individually and that it is the teachings which the rejections are based/rely upon to be transferred from one reference to the other to suggest the claimed subject matter, that are being indicated as insufficient to support the rejections as they are currently formulated. That is to say, the combination of the teachings is insufficient to establish a *prima facie* case. The Examiner is therefore requested to avoid an improper reliance on *In re Keller* (642 F.2d 413, 208 USPQ 871 (CCPA 1981)). The main thrust of *In re Keller* is that "the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference, nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art." (Emphasis added)

Indeed, in both of the rejections discussed supra, the teachings of Nakamura et al. are relied upon because it is acknowledged that Orita et al. fails to disclose/suggest that the buffer layer is "undoped." The rejection then proceeds to assert that it would be obvious to use an undoped buffer layer without explaining how the hypothetical person is to ignore what is actually disclosed. That is to say, it is assumed for the sake of traverse, that it is layer 12 of Orita et al. that is being taken as the buffer layer. Further, it should be noted that at column 4, line 8, that there is a clear suggestion that "layer 12 may contain a dopant."

How does the hypothetical person of average skill ignore this and proceed to assume that it should be "undoped" and why should this person then go look to Nakamura et al. for something

that not in keeping with the suggestions found in Orita et al.? Indeed, a full working knowledge of the claimed subject matter would appear to be necessary to achieve this shift away from what is suggested in the primary reference.

Conclusion

It is respectfully submitted that the claims as they have been amended are allowable over the art which has been applied in this Office Action. Favorable reconsideration and allowance of this application are courteously solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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Date: July 20, 2007
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